

3. *Tornadoes and severe local storms* were reported from various sections. Among the most prominent of these were the storms which visited Switzerland county, Indiana, on the 2d and 21st; Wythe county, Virginia, on the 25th; St. Joseph county, Indiana, on the 1st; Hardin county, Ohio, on the 2d; Adams county, Pennsylvania, on the 29th; Indianapolis, on the 1st and 2d; Quincy, Illinois, on the 14th; St. Louis, on the 18th; Omaha, Nebraska, on the 17th; Chicago, on the 22d; Dubuque, Iowa, on the 21st; North Platte, Nebraska, on the 26th; Detroit, on the 27th; and Philadelphia, on the 28th.

The tornado at Detroit was one of great violence and destructiveness in and around that city. Its path through the city was nearly north or north-northeast. It was apparently unaccompanied by electrical phenomena. Its rate of progress was irregular, sometimes appearing to stand still, and again moving with great velocity. Its duration was estimated at from three to five minutes, the length of its track a little more than a mile, and its width about one hundred and fifty feet. The vortitose motion was from right to left. It was first seen in the southwest as an exceedingly dark mass, with a violent whirling motion and a funnel suspended from it of the color of coal-smoke. In one or two localities it was attended by torrential rain, but generally it was a dry storm. There was considerable loss of life in its immediate vicinity; many houses were shattered beyond recognition.

This tornado was accompanied by terrific roaring, hissing and rumbling noises. It was preceded by hot and very oppressive weather for the four days previous. Three hours before its fatal stroke, it was preceded by a light shower of rain. The great outburst of the storm commenced about 6:15 p. m. of the 27th. This violent meteor was apparently not alone, but attended by others of minor importance in the immediate vicinity.

Hail-storms.—A severe hail-storm was reported from Bismarck, Dakota Territory, on the 23d, with stones from one-third to one-half inch in diameter; at Troy, Alabama, on the 12th; at Mt. Ida, Arkansas, on the 20th; near Detroit on the 27th; on the 2d, at Algona, Iowa, and on the 2d, 18th, 20th and 26th, at Leroy, Kansas; at Winchester, Kentucky, on the 6th; on the 12th, at Attaway Hill, North Carolina, and at several other points.

TEMPERATURE OF THE AIR.

The mean monthly temperature of the air will, as usual, be found in isotherms on Chart No. II, and in the table in the left-hand corner.

From these exhibits it will be seen that the temperature has been nearly normal for the Atlantic and Gulf States and Lower Lake region, but has fallen below the normal by nearly 2° in the Upper Lake region, the Ohio valley and Tennessee; and the upper Mississippi and lower Missouri valleys.

The lowest temperature has occurred on the coast of Maine, and the highest in the Southwest.

Frosts occurred very generally north of Maryland on the 13th and 14th. Frost was reported on the 14th from Oswego, Rochester and Buffalo, New York, Squam Beach, New Jersey, Portland and Mt. Desert, Maine, Florida and Springfield, Massachusetts, and many points in New York and Pennsylvania; on the 15th, in Pennsylvania and Vermont; on the 16th, from New Hampshire. The frosts of the 13th and 14th were quite heavy and damaging to crops. The frosts of the 13th were specially reported from New Market, Maryland, Freehold, New Jersey, and Fall river, Massachusetts. Light frost was reported from Wayne county, Pennsylvania, as late as the 21st.